

Date: Wednesday, 1/18/2006 4:04:54 PM
 User: Kim Johnston

Process Sheet

| | | | |
|-----------------------|---|------------------|--------------------|
| Customer | : CU-DAR001 Dart Helicopters Services | Drawing Name | : BRACKET ASSEMBLY |
| Job Number | : 25556D | | |
| Estimate Number | : 10281 | | |
| P.O. Number | : N/A | Part Number | : D3183043 |
| This Issue | : 1/18/2006 S.O. No. : N/A | Drawing Number | : D3183 REV C1 |
| Prsht Rev. | : NC | Project Number | : N/A |
| First Issue | : N/A Type : MACHINED PARTS | Drawing Revision | : C1 |
| Previous Run | : 25458 | Material | : N/A |
| Written By | : <u>SEE COMMENT BELOW</u> | Due Date | : 2/15/2006 |
| Checked & Approved By | : <u>SEE COMMENT BELOW</u> | Qty: | 4 Um: Each |
| Comment | : Est Rev:Pick:A 04.02.18 New issue KJ/DS | | |

Additional Product

Job Number:



| | | |
|---------|-----------------------|---------------|
| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|

| | | |
|-----|-----------------|-------------|
| 1.0 | M174B2000X01500 | 17-4 SS Bar |
|-----|-----------------|-------------|



Comment: Qty.: 0.4812 f(s)/Unit Total : 1.9249 f(s)
 Material: 17-4 SS Bar per AMS 5604/5643
 (M17-4-B1.500x02.000)
 Identify for D3183-043
 Batch: M14713

SA 06.02.07

| | | |
|-----|----------|----------|
| 2.0 | BAND SAW | BAND SAW |
|-----|----------|----------|



Comment: BAND SAW 1.500
 Cut blanks: (1.000" x 2.000") 5.500" long

SA 06.02.07

(4) + (1)

| | | |
|-----|-------|--------------------------------|
| 3.0 | HAAS1 | HAAS CNC VERTICAL MACHINING #1 |
|-----|-------|--------------------------------|



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3183-3 as per Folio FA322 and Dwg D3183
 Identify as D3183-3

2-Deburr

3-Scribe batch number

SA 06.02.07

5

| | | |
|-----|-----|--|
| 4.0 | QC2 | INSPECT PARTS AS THEY COME OFF MACHINE |
|-----|-----|--|



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

M8/SA 06.02.07

5

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: D3183-043 PAR #: N/A Fault Category: Prod / Machine Part NCR: Yes No DQA: 2 Date: 06/02/14
 QA: N/C Closed: 1 Date: 06.02.14

| NCR: <u>25556D</u> | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|--------------------|----------|---|-----------------------------|---|------------------------------|---------------------------------------|---|---------------------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| <u>SD</u> | <u>3</u> | - Counterbores and slots too big. Wobbly tool holder. - Width of slots are one piece is 0.215" instead of 0.200" | <u>QP</u> | - change tool holder - Part OK (see email) | <u>SA</u> <u>06.02.08</u> | <u>[Signature]</u> <u>06.02.14</u> | <u>QP</u> <u>06.02.14</u> <u>Per QS 642</u> | <u>[Signature]</u> <u>06.02.14</u> |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Date: Wednesday, 1/18/2006 4:04:54 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 25556D

Part Number: D3183043

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

mf 06/02/10

5

6.0

D312121

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 8.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D3121-21

Bolt B25456

MS 06/02/10

5

7.0

D3183045

Bearing Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total : 8.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D3183-045 Bearing Ass

B23974

MS 06/02/10

5

8.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble D3183-043 as per Dwg D3183.

MS 06/02/10

5

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

mf 06/02/10

5

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 574/2

06/02/13 (5)

11.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

505 06/02/14 (5)

06/02/14 (5)

Job Completion



| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

| | | | |
|--|--|---------------------|---------|
| DART AEROSPACE LTD | | Work Order: | 2556D |
| Description: Bracket | | Part Number: | D3183-3 |
| Inspection Dwg: D3183 Rev: C | | Page 1 of 1 | |

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------------------|---------------|------------------|--------|--------|----------------------|----------------|
| R0.190 | +/-0.030 | R.188 | / | | | |
| R0.063 | +/-0.010 | R.063 | / | | | |
| 0.182 | +/-0.010 | .182 | / | | | |
| 0.070 | +/-0.010 | .070 | / | | | |
| 0.100 | +/-0.010 | .103 | / | | | |
| Ø0.201 x 0.100 | +/-0.010 | .199 x .100 | / | | | |
| 0.182 | +/-0.010 | .182 | / | | | Cannot measure |
| 5.32 | +/-0.030 | 5.324 | / | | | |
| 5.036 | +/-0.010 | 5.036 | / | | | |
| 2.120 | +/-0.010 | 2.120 | / | | | |
| 1.290 | +/-0.010 | 1.288 | / | | | |
| 0.365 | +/-0.010 | .365 | / | | | |
| 0.218 | +/-0.010 | .214 | / | | | |
| 1.030 | +/-0.010 | 1.031 | / | | | |
| 1.90 | +/-0.030 | 1.888 | / | | | |
| 1.012 | +/-0.010 | 1.016 | / | | | |
| Ø0.201 x 0.100 | +/-0.010 | Ø.201 x .100 | / | | | |
| 0.182 | +/-0.010 | .182 | / | | | |
| 0.786 | +/-0.010 | .791 | / | | | |
| Ø0.392 | +0.002/-0.000 | .393 | / | | | |
| R0.19 | +/-0.030 | R.188 | / | | | |
| 3.954 | +/-0.010 | 3.957 | / | | | |
| 0.162 | +/-0.010 | .162 | / | | | |
| R0.19 | +/-0.030 | R.19 | 0 | | | |
| R0.25 | +/-0.030 | R.250 | / | | | |
| 4.26 | +/-0.030 | 4.265 | / | | | |
| 2.080 | +/-0.030 | 2.08 | / | | | |
| 1.155 | +/-0.010 | 1.155 | / | | | |
| 0.162 | +/-0.010 | .167 | / | | | |
| 0.36 | +/-0.030 | .36 | / | | | |
| 0.615 | +/-0.010 | .616 | / | | | |
| 0.435 | +/-0.010 | .434 | / | | | |
| 0.200 | +/-0.010 | .202 | / | | | |
| 0.381 | +/-0.010 | .379 | / | | | |
| 0.032 | +/-0.010 | 0.025 | / | | | |

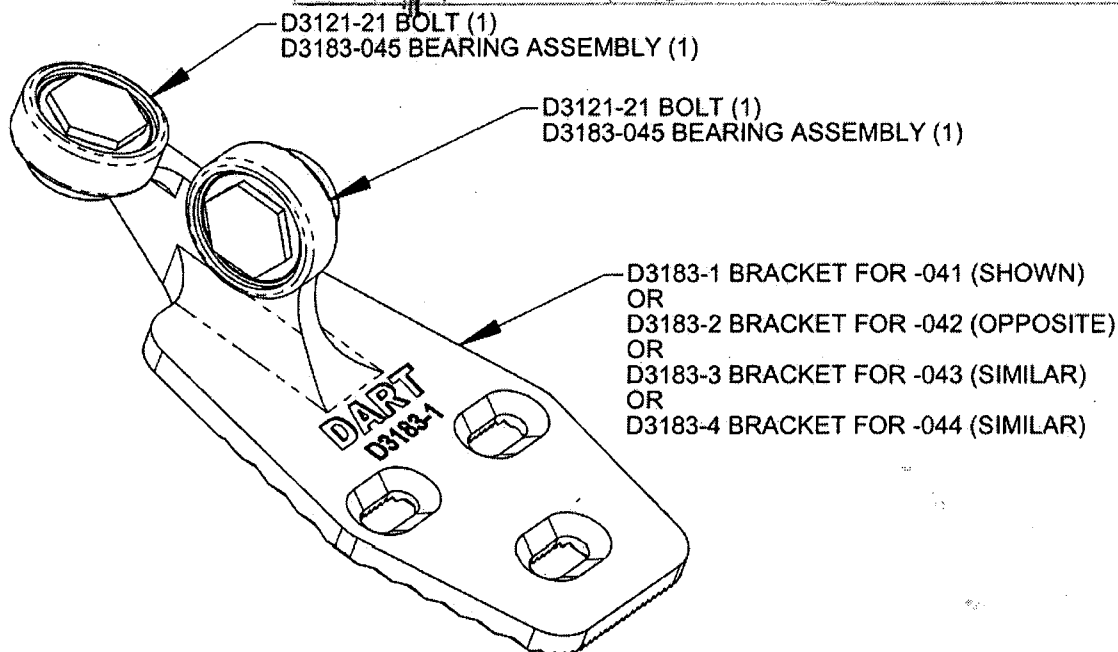
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|---------------------|----------|--------------------|----------|----------------------------|-----|
| Measured by: | SD/MS | Audited by: | mf | Prototype Approval: | N/A |
| Date: | 06.02.08 | Date: | 06.02.09 | Date: | |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|---------------------------|------------|----------|
| A | 03.11.12 | New Issue | KJ/RF | |
| B | 04.03.15 | Changes as per revision C | KJ/JLM/RF | |

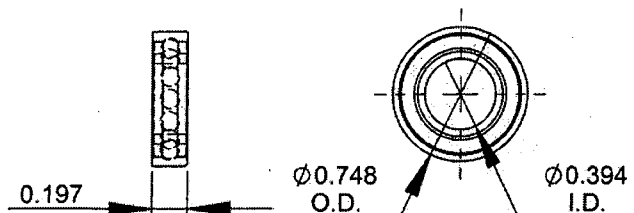


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|-------------------------|---------------------|--|------------------------|
| DESIGN # | DRAWN BY CP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED # | APPROVED # | DRAWING NO. D3183 | REV. C SHEET 1 OF 4 |
| DATE 04.02.17 | | TITLE BRACKET ASSEMBLY | SCALE 1:1 |
| A. | 03.01.24 | NEW ISSUE | |
| B. | 03.06.17 | REMOVE BEARING; 1.012 WS 0.882 | |
| C. | 04.02.17 | ADD -045/-9; 0.182 WAS 0.431 | |
| CI | 04.11.09 | 0.830 WAS 0.850 | |

RELEASED
04.03.01

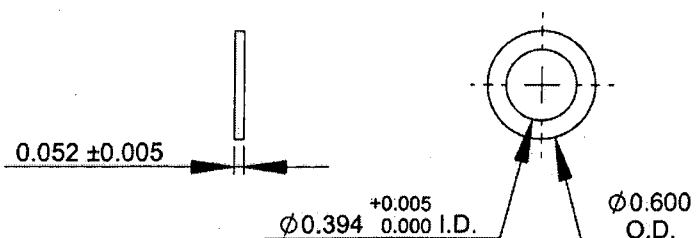


D3183-041 BRACKET ASSEMBLY (SHOWN)
D3183-042 BRACKET ASSEMBLY (OPPOSITE)
D3183-043 BRACKET ASSEMBLY (SIMILAR)
D3183-044 BRACKET ASSEMBLY (SIMILAR)



D3183-5 BEARING:
SPECIFICATION CONTROL DRAWING

- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



D3183-7 WASHER

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART-QSI-018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

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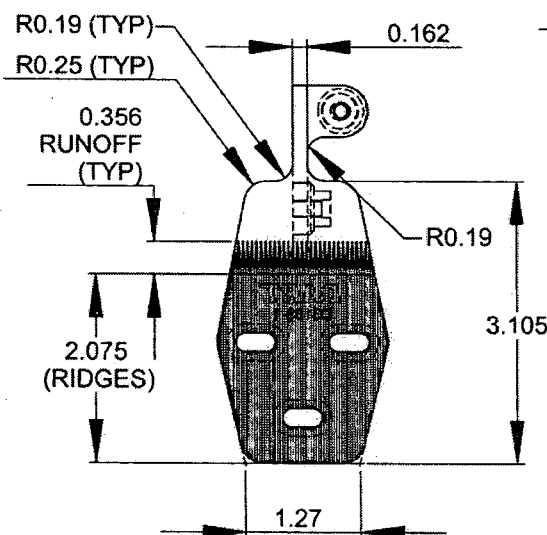
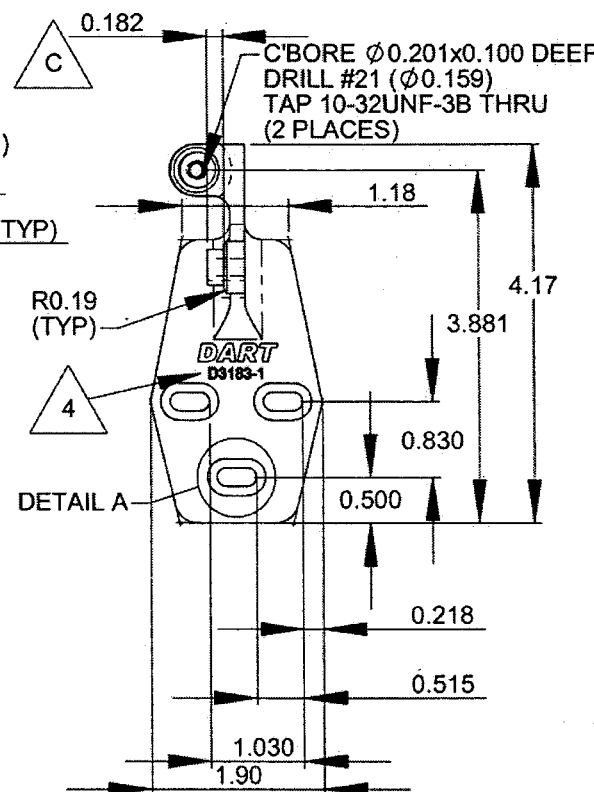
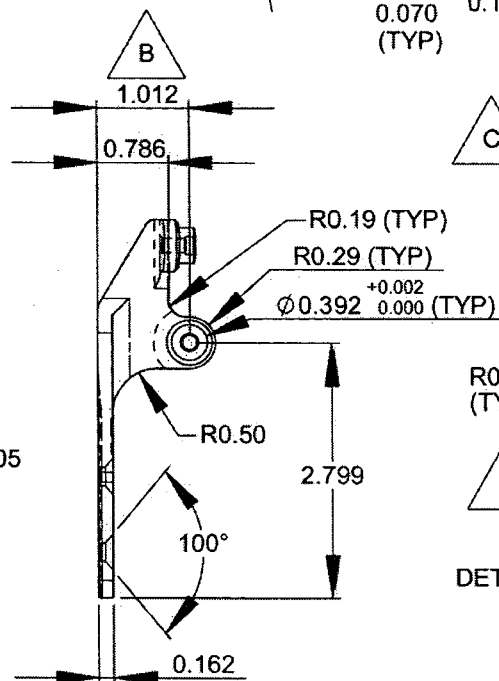
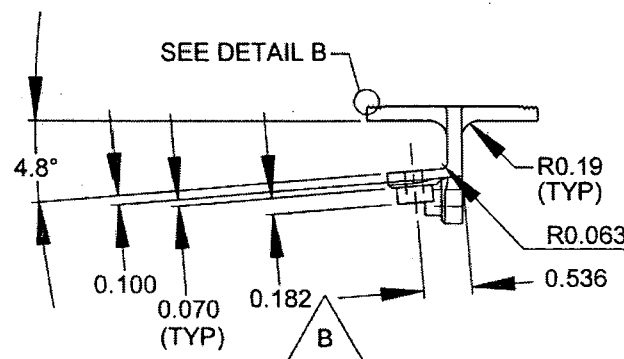
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NO. 25556-D

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04.02.01



| | | |
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| DESIGN | DRAWN BY | DART Aerospace Ltd |
| CHECKED | APPROVED | HAWKESBURY, ONTARIO, CANADA |
| DATE | DRAWING NO. | REV. C |
| 04.02.17 | D3183 | SHEET 2 OF 4 |
| TITLE | BRACKET ASSEMBLY | SCALE |
| | | 1:2 |



**D3183-1 BRACKET SHOWN
D3183-2 BRACKET OPPOSITE**

- 1) D3183-1 CAN BE MADE FROM D3183-3
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE STRENGTH = 150 ksi
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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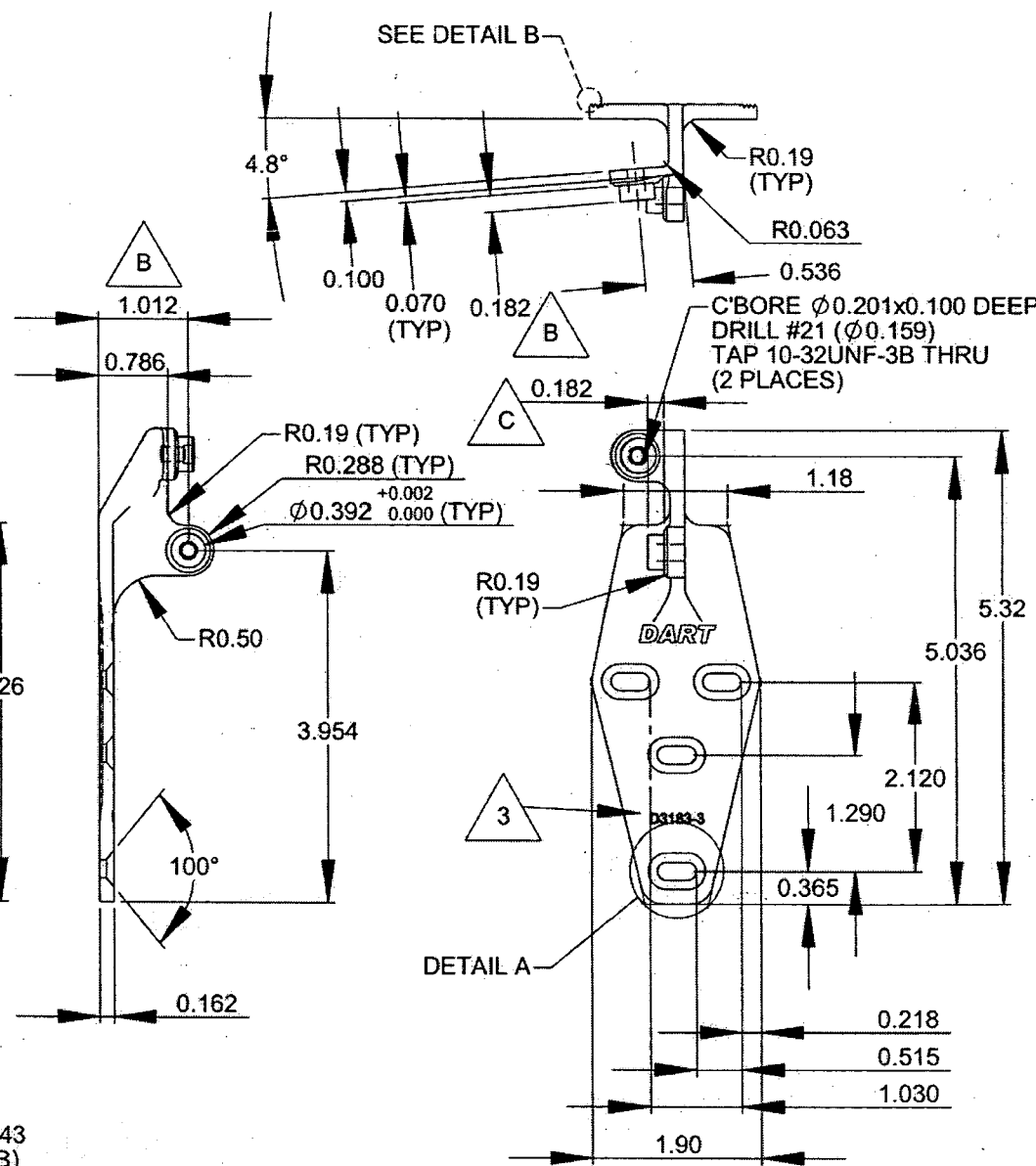
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NO 255662

DART



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| CHECKED | APPROVED | HAWKESBURY, ONTARIO, CANADA |
| DATE | DRAWING NO. | REV. C |
| 04.02.17 | D3183 | SHEET 3 OF 4 |
| TITLE | BRACKET ASSEMBLY | SCALE |
| | | 1:2 |



D3183-3 BRACKET SHOWN
(REPLACES BELL P/N 412-030-304-105)
D3183-4 BRACKET OPPOSITE
(REPLACES BELL P/N 412-030-304-106)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE STRENGTH = 150 ksi
MIN YIELD STRENGTH = 100 ksi
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) ENGRAVE DART P/N & LOGO AS SHOWN
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

RELEASED
04-03-01

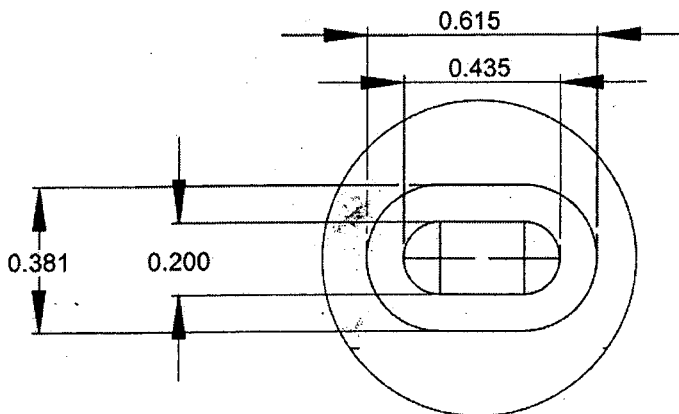
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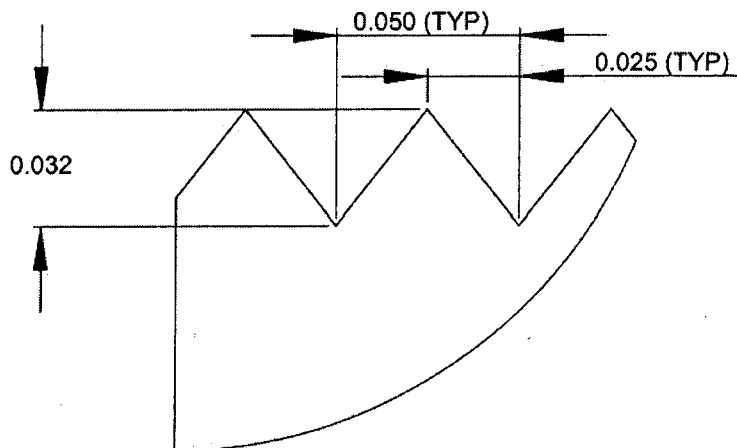


| | | | |
|-------------------------------|--------------------------------|---|------------------------|
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| CHECKED <i>[Signature]</i> | APPROVED <i>[Signature]</i> | DRAWING NO. D3183 | REV. C SHEET 4 OF 4 |
| DATE 04.02.17 | | TITLE BRACKET ASSEMBLY | SCALE 1:1 |

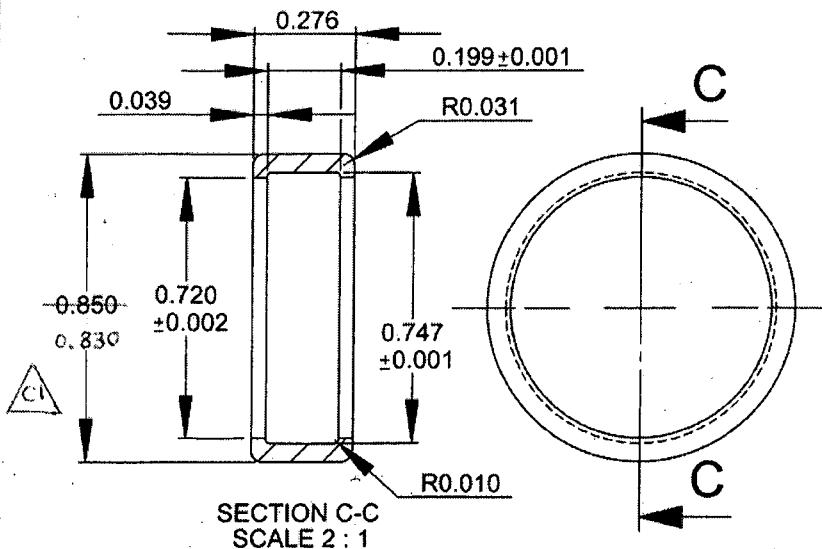


DETAIL A (2 : 1)

RELEASED
04.03.01



DETAIL B (20 : 1)



D3183-9 CAP

- 1) MATERIAL: DELRIN ROD, Ø1.00
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

D3183-045 BEARING ASSEMBLY

- 1) ASSEMBLE D3183-5 BEARING AND
D3183-9 CAP

REL. TO
ENGINEERING
UNCONTROLLED
SUBJECT TO A
WITHOUT NOT
WORK OR

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NO. 25556D

Chris Provencal

From: David Shepherd [davids@dartaero.com]
Sent: February 10, 2006 1:00 PM
To: Chris Provencal
Subject: Re: D3183-3 Bracket

This is an acceptable deviation.

David

----- Original Message -----

From: "Chris Provencal" <cprovencal@dartaero.com>
To: <davids@dartaero.com>
Sent: Friday, February 10, 2006 6:21 AM
Subject: FW: D3183-3 Bracket

>

>

> -----Original Message-----

> From: Chris Provencal [mailto:cprovencal@dartaero.com]
> Sent: February 9, 2006 3:26 PM
> To: 'davids@dartaro.com'
> Subject: D3183-3 Bracket

>

> For D3183-3 bracket (roller brackets)

>

> There was a worn out tool, for the slotted holes on one, the height of the
> slots should be 0.200, we are measuring 0.215".

>

> Is this OK?

>

>

>

> Sincerely,
> Chris Provencal
> DART Aerospace Ltd.
> Email...cprovencal@dartaero.com
> Phone...613-632-3336
> Fax.....613-632-4443

>

>